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APRIL 9.

Mr. GEORGE W. TRYON, Jr., in the chair.

Twenty-two persons present.

The following papers were presented for publication:—

"Transition forms in Crinoids, and description of five new species," by Charles Wachsmuth and Frank Springer.

"On a new Species of Sponge," by Alpheus Hyatt.

Vegetative Repetition of Cerebral Fissures.—Dr. A. J. PARKER remarked that in studying the cerebral fissures, as found in the brains of different animals, we find them divided into several groups. These are called primary, secondary, tertiary, etc., according to their constancy and degree of importance. The primary fissures comprise those fundamental, deep, and important clefts, which appear earliest in the development of the embryo, and are to be found represented in all brains where marked fissuration exists. They correspond in position and bear definite relations with deep and important structures. The secondary fissures come next in importance. They appear in the embryo after the primary, and comprise those fissures which give the general character of fissuration to groups of brains. Tertiary fissures, etc., are the smaller, less important ones which branch off from the primary and secondary, or mark more or less deeply the various separate convolutions formed by the other fissures. These fissures give the special character to each brain, and enable us to point it out as belonging to this or that genus or species of animals. The constancy in appearance and position of these fissures follows the same order as given above; that is, the primary are the most constant in appearance and position, the secondary next, whilst the tertiary, etc., are the most variable; many of the minor branches of this latter group being present or absent, even in the same species of animal. With reference to the cause of development of these fissures three views are held.

According to one view, which is the one that has had most currency until within recent years, and which is still supported by many, such as Ecker, etc., the fissures of the cerebral cortex are due to mechanical causes entirely, being produced by the cranial contents developing more rapidly than the cavity of the skull, the brain folding itself in order to accommodate itself in bulk to the space allowed by its rigid bony environment. In this case, therefore, the fissures represent merely lines of least resistance to the compressing forces, and have no structural significance. According to the second view, fissures represent lines of retarded fissured. These fissures, when they appear, follow the direction of the primary occipital arch, so that a secondary arch appears within the first. This arch, in the same manner as the primary, extends around the upper and lower branches of the posterior extremity of the calcarine fissure. It might be well seen in many of the photographs to which he directed attention, especially in *Macacus nemestrinus* and in *Cynocephalus pors.* Sometimes this secondary arch is interrupted at one or two places by small convolutions, just as the primary arch is by the various *plis de passage*, but the separate portions still preserve the same relations as before. In the higher Apes these arches become more undulated. This is also the case in *Ateles.* In Man they become very much contorted and broken up, and it becomes difficult to recognize the relations between these detached portions and the parts of the primary arch which also become much separated. In the negro, these fissures remain more nearly in the state in which they are found in the higher Simians, and the correspondence between the two arches can be more clearly distinguished. The fissures of the occipital lobe should not, it appeared to him, be considered as of the same significance as the fissures of the other lobes, or as the fissures of the primary arch, but of secondary importance, and he would regard them as repetitions of the two branches of this arch.

In the temporal lobe Ecker has described a fourth temporal fissure in addition to the three usually recognized. This fissure is, however, as he admits, but slightly developed and often absent. He would regard this fissure in the same light as the fissure of the occipital lobe, viz., as a repetition of one of the temporal fissures. These constitute the most important fissures which he had been led to consider as of secondary significance, since they merely follow lines of development already laid down by a preceding furrow, and do not partake of the nature of independent fissures to the same extent as many others, although they may appear by their length and depth to be of equal morphological significance.

The following papers were ordered to be printed:—